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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09:607,017	06/29/2000	Chiyoaki Iijima	9319S0073COA	1371

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Harness Dickey & Pierce PLC
P O Box 828
Bloomfield Hills, MI 48303

EXAMINER

AKKAPEDDI, PRASAD R

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 12/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/607,017	IIJIMA, CHIYOAKI	
	Examiner	Art Unit	
	Prasad R Akkapeddi	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see amendment, filed 09/16/2003, with respect to the rejection(s) of claim(s) 22-33 under 35 U.S.C. 103 have been fully considered and are persuasive, due to the submission of the translation document of the foreign priority papers. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Rudisill et al.

Claim Objections

2. Claims 23 and 24 are objected to because of the following informalities: a light reflective device cannot emit a light ray. A reflective device only reflects light (i.e., a mirror, for example) or it can transmit a light ray (if partially transparent). A lamp emits a light ray. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 22-27 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rudisill et al. (Rudisill) (U.S. Patent No. 5,339,179) in view of Barbier et al. (Barbier) (U.S. Patent No. 5,479,279).

As to claims 22, 23 and 30: Rudisill discloses a display device (LCD) with a liquid crystal panel, a liquid crystal layer (10) between two substrates (12 and

14) (Fig. 1), a polarizer (30) on one side of the panel, a first reflective polarizer (28) on the other side of the panel, a lighting apparatus (38 and 36) disposed on the side of the polarizer (28) opposite to the polarizer. Rudisill also discloses that the lighting apparatus (38 and 36) having a diffuser (44) with a number of pits (48) (pits) which diffuse light and reflect light rays coming from the first reflective polarizer (28) and transmit light rays from the lighting apparatus (38, 36) toward the first reflective polarizer (28) (Figs. 1 and 2A).

As to claims 24 and 25: Rudisill discloses a lighting device with a fluorescent tube (38) and represents light rays emitting from the tube (Fig. 2A). Hence Rudisill discloses a lighting device emitting a light ray. Since fluorescent light consists of a combination of many colors, Rudisill's disclosure also includes a color ray.

As to claims 26, 27 and 31: Rudisill discloses a light angle control device (48) disposed between the second polarizing splitting device (28) and the lighting device (38), a light diffusing plate (36) which also serves as a diffuser that reflects and transmits light rays. The light diffusing plate (36) serves as a light guide and a reflector (mirrored surface, 50) on the opposite to the diffusing side is also disclosed (Fig. 2B).

Rudisill discloses a polarizer and a liquid crystal layer. However, Rudisill does not call them as polarizing splitting device and a polarization axis varying device respectively.

Barbier in disclosing an optimized color display device discloses a first polarizer which splits the light into light having two perpendicular polarization axes (col. 7, lines 14-15) and a liquid crystal matrix (6) whose degree of polarization can be electrically controlled (col. 4, lines 33-37).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the polarizing splitting device for a polarizer and a polarization axis varying device for a liquid crystal layer to provide for an optimized color display device which can be optimally adapted to the performance of human vision.

5. Claims 28-29 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rudisill and Barbier as it applied to claim 27 above (for claims 28-29) and further in view of Weber et al. (Weber) (U.S. Patent No. 5,686,979).

As to claims 28 -29: Neither Rudisill nor Barbier disclose a third polarizer located between the lighting device and the light diffusing device.

Weber in disclosing an optical panel capable of switching between reflective and transmissive states, discloses a display (128) (Fig. 9), a LCD panel (142), a backlight (132), a front polarizer (138), a first reflective polarizer (148) and a second reflective polarizer (144) (making this a third polarizer), located between the backlight (132) and the diffusion sheet (134). Weber also discloses that the polarization direction of the third reflective polarizer (144) (third direction) must be parallel to the polarization direction of the front polarizer (140), hence must be different from the second reflective polarizer (148) direction (second

direction), since in (col. 1, lines 46-47), Weber discloses that the transmission axis of the front polarizer is crossed with the transmission axis of the rear polarizer.

As to claim 32: Rudisill and Barbier disclose all the recited limitations as pointed earlier, but do not disclose an application of the LCD display in an electronic apparatus.

Weber in disclosing a display device, discloses that such a device is widely used in laptop computers, hand-held calculators, digital watches (col. 1, lines 33-35), which are all examples of an electronic apparatus.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the third polarizer located at the specified location to provide an optical device which can be switched between a reflecting state and a transmitting state to avoid excess heat build up in the reflection mode (col.1, lines 1-25).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 703-305-4767. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 703-305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

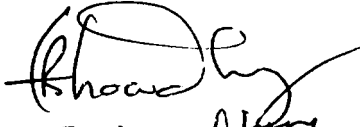
Application/Control Number: 09/607,017
Art Unit: 2871

Page 6

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0530.

PRA

Prasad R Akkapeddi, Ph.D
Examiner
Art Unit 2871


T. Choudhury
Primary Examiner